

## ACKNOWLEDGEMENTS

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## EXCURSIONS

### YUNDURUP DELTA ISLANDS

Since November 1967 members of the Western Australian Naturalists' Club have been making observations on the fauna and flora on the islands of the Murray River delta at Yundurup, mainly on Culeenup (or Mill) Island. During the weekend of April 25-27, 1969 an organized Club excursion to the area was held, under the leadership of the President, Mr. D. R. Reid. A similar excursion was conducted a year later, April 10-14, 1970. On both occasions Mr. and Mrs. John Oldham made available their cottage at Lot 26, Culeenup I., as headquarters of the expeditions.

So promising was the area regarded for sustained natural history observations, in a wide variety of fields, that it was decided to initiate moves for a permanent field station there. Accordingly, after preliminary inquiries to the Surveyor-General, Mr. John Morgan, the President made a formal request on June 9, 1969 to the Lands and Surveys Department for a grant of land for the purpose. This was favourably entertained and after further correspondence, detailing the Club's intentions, the Governor in Council approved that Lots 8 and 9 on Culeenup Island, being Reserve No. 5613, and totalling one acre in area, "should vest in and be held by the Western Australian Naturalists' Club in trust for the purpose of a Field Station" (vide *Government Gazette*, May 8, 1970).

There are nine river channels and eight islands in the delta of the Murray River. Three of the islands have been examined by Club parties—Culeenup, Jeegarnyeejip (or Reserve) and Meeyip Is., with most attention being paid to the first-named. Mr D. R. Reid specialised in the geomorphology of the area, Miss E. Kniep organized the botanical collections and Dr. D. L. Serventy collated the bird observations of the various parties. Most of the visits have been made in the summer and autumn, with a minimum in the winter and spring; no visits at all were made in the important months of September and October when there is a general flowering of the native flora. The following report is a consolidated account of the results obtained to date, both of the organized and individual visits to the delta, and may be regarded as the first report of the Club's field station.

## GEOMORPHOLOGY

Report by D. R. Reid: Yundurup is the only typical delta on the coast, and is really a double delta, for both the Serpentine and Murray Rivers debouch into Peel Inlet close together. The delta resulted from an accumu-

lation of sediments, more than the sea could remove. Deltas are self-destructive and aerial photographs clearly show relict or "fossil" channels of the Murray north and south of the present channel systems at Yundurup. The salt pans on the islands and adjoining mainland are dismembered parts of former extensions of Peel Inlet. The islands show interesting structures. The relatively high levee banks along their margins were formed at periods of high flood level, when the flood waters, spreading out, abruptly dropped the coarser parts of their load.

## HYDROLOGY

In the summer months the delta channels are filled with sea-water. The salinity is reduced and the water becomes brackish in April and May when the Murray River starts to run strongly with the onset of the autumn rains. In the winter and spring the surface water is fresh, brown and opaque.

The Salt Lake, at the north-western end of Culeenup Island, holds water only in the winter months.

The freshwater swamp, north of the water tower on Lot 31 (Government reserve), is also ephemeral, carrying surface water, of shallow depth, only between June and October.

## BOTANY

Owing to the nature of the terrain several plants characteristic of the adjoining parts of the coastal plain are absent from the islands. The only *Eucalyptus* is the Flooded Gum (*E. rudis*), though a closely similar tree, at present regarded by botanists as the same species, is under investigation. Miss Kniep first drew attention to the fact that it differed from typical *rudis* by the possession of narrower leaves and appeared to start flowering earlier. There are no Jarrah, Marri, Christmas Tree or Blackboys, and only one *Banksia* species was found; it had a restricted distribution on Culeenup Island.

The following list, of 66 native and 10 introduced species, covers the collections of plants made by members on various visits between July 1968 and November 1969, and identified at the Western Australian Herbarium. The known flowering dates on the islands are given in brackets. The list will be considerably expanded by collections in the spring, when there is a general flowering of plants, but hitherto very few visits then have been made by members.

### GYMNOSPERMAE

#### Cycadaceae

*Macrozamia reidleyi* (Gaud.) C. A. Gardn. (Zamia Palm). Plentiful on Culeenup and Jeegarneyejip Is.

#### Cupressaceae

*Actinostrobus pyramidalis* Miq. (Swamp Cypress). Only one tree known to occur, on Jeegarneyejip I., opposite Lot 33 on Culeenup I.

### ANGIOSPERMAE

#### MONOCOTYLEDONEAE

##### Hydrocharitaceae

*Halophila ovalis* (R. Br.) Hook. Stranded on Meeyip I., April.

##### Cyperaceae (Sedges)

*Carex fascicularis* Soland et Brot. Belts of this seasonal sedge occur intermittently with *Juncus maritimus* on the margins of the delta channels, and are green in the spring and summer, but die back and are dry and brown in the autumn and winter.

*Galnia trifida* Labill. Culeenup and Jeegarneyejip Is.

*Lepidosperma longitudinale* Labill. Culeenup I.

*Scirpus nodosus* Rottb. Culeenup I.

*Schoenus calostachyus* (R. Br.) Poir. Culeenup I.

*Schoenus fascicularis* Nees. Culeenup I.

## Restionaceae

- Leptocarpus coangustatus* Nees. Culeenup I.  
*Leptocarpus aristatus* R. Br. (♀ inflorescence in April). Tussocks near the Salt Lake on Culeenup I.

## Liliaceae

- Arthropodium capillipes* Endl. (April). Culeenup and Jeegarnyeejip Is.  
*Chamaescilla corymbosa* (R. Br.) F. Muell. (Blue Squill; August). Culeenup I.  
*Corynotheca micrantha* (Lindl.) Macbride. (April). Culeenup I.  
*Lomandra suaveolens* (Endl.) Ewart. (Mat Rush; April). Culeenup I.

## Juncaceae (Rushes)

- Juncus maritimus* Lam. (Shore Rush). Fringing the banks of the delta channels, Culeenup and Jeegarnyeejip Is.  
*Juncus pallidus* R. Br. (Giant Rush). Jeegarnyeejip and Meeyip Is.

## Amaryllidaceae

- Anigosanthos viridis* Endl. (Green Kangaroo Paw; September). Culeenup I.  
*Conostylis aculeata* R. Br. (Cotton-heads; August). Culeenup and Jeegarnyeejip Is.

## Iridaceae

- Patersonia occidentalis* R. Br. (Native Iris, Fish Flower; October, November). Culeenup and Jeegarnyeejip Is.

## Orchidaceae

- Caladenia deformis* R. Br. (Blue Fairy; July, August). Culeenup I.  
*Caladenia flava* R. Br. (Cowslip; July, August). Culeenup I.

## DICOTYLEDONEAE

### Casuarinaceae

- Casuarina obesa* Miq. (= *glauca* auctt.). (Swamp Oak). Fringing the delta channels.

### Proteaceae

- Banksia littoralis* R. Br. (Swamp Banksia; April, May). Isolated groves on Culeenup I.  
*Couospermum triplinervium* R. Br. (Smoke Bush). Culeenup I.  
*Hakea prostrata* R. Br. Culeenup and Jeegarnyeejip Is.  
*Hakea varia* R. Br. (Variable-leaved Hakea). Culeenup and Jeegarnyeejip Is.

### Santalaceae

- Exocarpos sparteus* R. Br. (Broom Ballart). Culeenup and Jeegarnyeejip Is.

### Loranthaceae

- Lysiana casuarinae* (Miq.) Tiegh. (Sheoak Mistletoe; April). Parasitic on *Casuarina obesa*, Culeenup I.

### Chenopodiaceae

- Arthrocnemum bidens* Nees. Salt Lake, Culeenup I.  
*Arthrocnemum halocnemoides* Nees, var. *halocnemoides*. (Shrubby Glasswort). Salt Lake, Culeenup I.  
*Arthrocnemum halocnemoides* Nees, var. *pergranulatum* Black. Jeegarnyeejip I.  
*Arthrocnemum* sp. (undescribed). Salt Lake Culeenup I.  
*Atriplex hypoleuca* Nees. Meeyip I.  
*Atriplex patula* L. Meeyip I.  
*Rhagodia parabolica* R. Br. (Mcaly Saltbush; April). Culeenup and Jeegarnyeejip Is.  
*Salicornia quinqueflora* Ung.-Sternb. Salt Lake, Culeenup I.

### Amarantaceae

- Alternanthera nodiflora* R. Br. (Joyweed; April). Culeenup I., by Old Mill.

### Aizoaceae

- Carpobrotus aequilaterus* (Haw.) N.E.Br. (Pigface). Culeenup and Jeegarnyeejip Is.  
*Tetragonia decumbens* Mill. Meeyip I.

## Lauraceae

*Cassytha racemosa* Nees. (Native Dodder). Culeenup and Jeegarnyeejip Is.

## Cruciferae

*Cakile maritima* Scop. (Sea Rocket; April). Meeyip I.

## Mimosaceae

*Acacia cyanophylla* Lindl. (Orange Wattle). Culeenup and Jeegarnyeejip Is.

*Acacia pulchella* R.Br. (Prickly Moses). Culeenup and Jeegarnyeejip Is.

## Papilionaceae

*Dillwynia dillwynioides* (Meissn.) Druce. (Orange flowers, July, August). Culeenup I.

*Gomphobium tomentosum* Labill. Culeenup I.

*Hardeubergia comptoniana* Benth. (Wild Sarsaparilla, Native Wistaria; July, August). Culeenup and Jeegarnyeejip Is.

*Jacksonia furcellata* (Bonpl.) D.C. (Stinkwood; April). Culeenup and Jeegarnyeejip Is.

*Jacksonia sternbergiana* Hug. (Stinkwood; April, June, July). Culeenup and Jeegarnyeejip Is.

*Viminaria demudata* Sm. (Golden Spray; November). Culeenup I.

## Sapindaceae

*Dodonaea attenuata* A. Cunn. (Native Hop). Jeegarnyeejip I.

## Frankeniaceae

*Frankenia pauciflora* R.Br. (Common Sea Heath; April). Culeenup I. by Salt Lake.

## Myrtaceae

*Eucalyptus rudis* Endl. (Flooded Gum; August). Culeenup and Jeegarnyeejip Is.

*Kunzea ericifolia* Reiehb. (Spearwood; November). Culeenup and Jeegarnyeejip Is.

*Melaleuca hamulosa* Turez. Culeenup I. (near Salt Lake), Meeyip I. *Melaleuca incana* R.Br. (Grey Honey-Myrtle; June). Culeenup and Jeegarnyeejip Is., in the ephemeral freshwater swamps.

*Melaleuca raphiophylla* Schau. (Swamp Paper-bark). One of the bigger trees on the margins of the delta channels and in damp places on all the islands.

## Epacridaceae

*Brachyloma preissii* Sond. Jeegarnyeejip I.

## Primulaceae

*Samolus repens* (Forst.) Pers. (November). Culeenup I.

## Solanaceae

*Anthocercis littorea* Labill. (Yellow Tail-flower; April, June, July, August). Culeenup I.

## Myoporaceae

*Myoporum oppositifolium* R.Br. (April). Culeenup I.

## Lobeliaceae

*Lobelia anceps* Thunb. (April). Culeenup I.

## Goodeniaceae

*Dampiera trigona* de Vriese. (July, August). Culeenup I.

*Goodenia filiformis* R.Br. (April). Culeenup I.

## Compositae

*Waitzia citrina* (Benth.) Steetz. (Yellow Everlasting; October, November). Culeenup and Jeegarnyeejip Is.

## Introduced Plants

## MONOCOTYLEDONEAE

### Iridaceae

*Watsonia ?leipoldtii* L. Bolus. (Watsonia). Dense stands on parts of Culeenup and Jeegarnyeejip Is., near the river channels. Aerial parts die off during the summer.

## DICOTYLEDONEAE

### Chenopodiaceae

*Chenopodium murale* L. (Goosefoot). Culeenup I.

### Papilionaceae

*Melilotus indica* (L.) All. (King Island Melilot) Culeenup I., near Old Mill.

### Apiaceae

*Eryngium pinnatifidum* Bunge. (Blue Devil). Jeegarnyeejip I.

### Scrophulariaceae

*Perentuccia viscosa* (L.) Caruel. (Sticky Bartsia; April). Jeegarnyeejip I.

### Asteraceae

*Aster subnolatus* Michx. (Bushy Starwort; April). Culeenup I.

*Arctotheca calendula* (L.) Levyns. (Capeweed). Culeenup I.

*Hypochoeris radicata* L. (Flatweed Dandelion). Culeenup I.

*Inula graveolens* (L.) Desf. (Stinkwort; April). Culeenup and Jeegarnyeejip Is.

### Sea-weeds

On the strand at Meeyip I., the following two species of Brown Sea-weeds were collected in April: *Cystophora uvifera* (Ag.) J. Ag., and *Cystoseira abrotanifolia* Ag.

## BIRDS

The following 74 species have been recorded on Culeenup I. and its vicinity between November 1967 and April 1970 by the following observers: Max Bailey, John Dell, Brian Hutchison, Ian Edgar, A. G. Mathews, L. Milhinch, D.R. Reid, L. E. Sedgwick and D. L. Serventy:

Pelican, *Pelecanus conspicillatus*.—Up to 15-20 birds may be seen in the channels and in larger numbers on sand flats at the entrance to Peel Inlet.

Black Cormorant, *Phalacrocorax carbo*.—A few birds constantly seen flying over Culeenup I., individuals with white flank patches in April.

Little Black Cormorant, *P. sulcirostris*.—Seen throughout the year, and flights pass over the islands in the evening to roosting sites. Occasionally large flocks over the shallows in adjoining parts of Peel Inlet.

Pied Cormorant, *P. varius*.—A few individuals roosting on sandbanks at mouth of delta.

Little Pied Cormorant, *P. melanoleucos*.—Seen throughout the year; in the evenings large flocks flying to roosts upstream from Peel Inlet.

Australian Darter, *Auhinga rufa*.—A few birds seen throughout the year in the channels.

White Egret, *Egretta alba*.—Odd birds throughout the year in fringe vegetation in river channels.

White-faced Heron, *Ardea novae-hollandiae*.—An occasional bird to be seen at most times of the year.

Nankeen Night-Heron, *Nycticorax caledonicus*.—Immature and adult birds occasionally seen in bank vegetation; heard calling at night.

Straw-necked Ibis, *Threskiornis spinicollis*.—A flock of c. 40 flew over Culeenup I. in July (1968).

Mountain Duck, *Tadorna tadornoides*.—9 individuals on sandbanks off delta in April 1969.

Black Duck, *Anas spenceriliosa*.—A few birds in river channels; 13 on Salt Lake in April 1969.

Grey Teal, *A. gibberifrons*.—A few near river banks and on delta banks (January, April).

Musk Duck, *Biziura lobata*.—One in river channel, January 1968.

Whistling Eagle, *Haliastur sphenurus*.—Occasionally seen circling overhead, April, May.

Osprey, *Pandion haliaetus*.—Once in Peel Inlet, off Culeenup I., April 1969.

Dusky Moorhen, *Gallinula tenebrosa*.—An occasional bird encountered in the channels and fringe vegetation, January—May.

Western Swamp-hen, *Porphyrio porphyrio*.—A few individuals in fringe vegetation along channel banks, January—April.

Coot, *Fulica atra*.—An occasional individual in river channels, April and May.

Red-capped Dotterel, *Charadrius alexandrinus*.—On sandbanks off delta islands, April.

Bar-tailed Godwit, *Limosa lapponica*.—c. 50-60 birds on sand banks off Culeenup I., April 1970.

Common Sandpiper, *Tringa hypoleucos*.—Single birds on channel banks, January.

Greenshank, *T. nebularia*.—Heard calling over Culeenup I., and seen in river channels and delta flats, January—May.

Red-necked Stint, *Erolia ruficollis*.—On the Salt Lake and delta flats.

White-headed Stilt, *Himantopus himantopus*.—A flock of c. 50 on delta sandbanks, April 1969.

Avocet, *Recurvirostra novaehollandiae*.—On delta sandbanks, up to 40; April, August.

Silver Gull, *Larus novaehollandiae*.—A few birds throughout the year in river channels.

Marsh Tern, *Chlidonias hybrida*.—c. 50 in Peel Inlet off Culeenup I., April 1969, and c. 100 in April 1970.

Caspian Tern, *Hydroprogne caspia*.—A few birds occasionally fly along river channels and over adjoining flats off delta.

Crested Tern, *Sterna bergii*.—A few occasionally fly up and down the channels.

Fairy Tern, *S. nereis*.—A few birds on sand banks off Culeenup I., April 1969.

Common Bronzewing, *Phaps chalcoptera*.—One individual flushed on Jeegarnyeejip I., April (1969 and 1970).

Purple-crowned Lorikeet, *Glossopsitta porphyrocephala*.—A small flock passed over Culeenup I., January 1968.

White-tailed Black Cockatoo, *Calyptrorhynchus baudini*.—Heard calling on Culeenup I., in pine trees, May 1968.

King Parrot, *Purpureicephalus spurius*.—Noted on Culeenup I., between April and June (1968, 1969 and 1970).

Twentyeight Parrot, *Barnardius zonarius*.—A few on Culeenup and Jeegarnyeejip Is. between April and July (1968, 1969 and 1970).

Golden Bronze Cuckoo, *Chrysococcyx plagosus*.—Heard calling on Culeenup I., January 1968 and August 1969.

Fan-tailed Cuckoo, *Cacomantis flabelliformis*.—Birds trilling fairly persistently on Culeenup I. between April and August (1968, 1969 and 1970).

Tawny Frogmouth, *Podargus strigoides*.—One seen hunting at dawn, Culeenup I., April 1970.

Kookaburra, *Dacelo gigas*.—Heard and seen occasionally.

Saered Kingfisher, *Halcyon sauctus*.—Odd individuals seen and heard on Culeenup I. between November and January (1967, 1968 and 1969).

Rainbow-bird, *Merops ornatus*.—Passing over Culeenup I. in January (1968, 1969).

Welcome Swallow, *Hirundo neoxena*.—Throughout the year, in small numbers, hunting over river channels.

Tree-Martin, *Petrochelidon nigricans*.—A few circling overhead, April—May and in August.

Australian Pipit, *Anthus novaeseelandiae*.—Sometimes seen flying over islands.

Black-faced Cuckoo-Shrike, *Coraciua novaehollandiae*.—One or two at most times of the year.

Little Grass-bird, *Megalurus grauivens*.—Once heard calling in samphires by the Old Mill, Culeenup I., November 1967.

Banded Blue Wren, *Malurus splendens*.—Regularly present on Culeenup I., several separate groups. Also on Jeegarnyeejip and Mceyip Is.

Western Warbler, *Gerygone fusca*.—May be heard singing at any time of the year.

Broad-tailed Thornbill, *Acanthiza apicalis*.—The common thornbill of the islands, met with throughout the year, usually in pairs.

Western Thornbill, *A. inornata*.—Recorded once on Culeenup I., January 1968.

Yellow-tailed Thornbill, *A. chrysorrhoa*.—Noted in January and in flocks in April and May.

Spotted Scrub-Wren, *Sericornis maculatus*.—In the dense thickets by the Salt Lake, Culeenup I., and also on Jeegarnycejip I.

White-fronted Chat, *Epthianura albifrons*.—A few noted on Meeyip I., April 1970.

Scarlet Robin, *Petroica multicolor*.—Regularly seen or heard, Culeenup and Jeegarnycejip Is.

Grey Fantail, *Rhipidura fuliginosa*.—Heard or seen throughout the year on Culeenup and Jeegarnycejip Is.

Willy Wagtail, *R. leucophrys*.—One or two birds may usually be encountered at any time of the year on Culeenup and Jeegarnycejip Is.; but less consistently than the previous species.

Restless Flycatcher, *Seisura inquieta*.—One noted Culeenup I., April 1970.

Golden Whistler, *Pachycephala pectoralis*.—Occasionally seen, January to May, particularly in the dense thickets near the Salt Lake, Culeenup I.

Rufous Whistler, *P. rufiventris*.—Seen or heard singing throughout the year.

Western Shrike-Thrush, *Colluricincla rufiventris*.—Heard singing, April, May.

Black-capped Sittella, *Neositta pileata*.—A flock encountered once on Culeenup I., May 1969.

Mistletoe-bird, *Dicaeum hirundinaceum*.—Seen or heard calling frequently in the summer and autumn.

Red-tipped Diamond-bird, *Pardalotus substriatus*.—Heard calling at irregular intervals.

Western Silvereye, *Zosterops gouldi*.—Frequently seen or heard; also noted on Jeegarnycejip and Meeyip Is.

Brown Honeyeater, *Lichmera indistincta*.—Generally present; the song is very conspicuous among the bird sounds between August and November.

Singing Honeyeater, *Meliphaga virescens*.—Noted at the North Yundurup boat landing, at the Old Mill, and on Lot 26, but not common.

New Holland Honeyeater, *Phylidonyris novaehollandiae*.—A party once noted on Culeenup I. in April 1969. Seen on Jeegarnycejip I., April 1970 and past season's nest found.

Red Wattle-bird, *Anthochaera carunculata*.—Heard on Culeenup I. at most times of the year.

Magpie-Lark, *Grallina cyanoleuca*.—Birds seen occasionally, January, April, May, June, November.

Dusky Wood-Swallow, *Artamus cyanopterus*.—Parties occasionally fly over Culeenup I., April, May.

Grey Butcher-bird, *Cracticus torquatus*.—Singing at most times of the year.

Western Magpie, *Gymnorhina dorsalis*.—Resident on Culeenup I., not known how many territorial groups exist; one uses the water tower on Lot 31 as a singing station.

Raven, *Corvus coronoides*.—Noted all the year round.

## REPTILES

No special studies have been undertaken, but the following species have been recorded so far:

### Tortoises

Long-necked Tortoise, *Chelodina oblonga*.—One seen in Jeegarnycejip Branch in January 1968.

## Snakes

Dugite, *Demansia nuchalis*.—Occasionally recorded by island residents; one was killed on Culeenup I. in November 1969.

## Lizards

Jew Lizard, *Amphibolurus barbatus*.—One seen on Culeenup I. on August 27, 1969.

King's Skink, *Egernia kingii*.—One collected on Culeenup I. from a hole in the floor of a cottage on Lot 26 on April 12, 1970.

New Holland Skink, *Leiolepisma trilineatum*.—One specimen collected on Culeenup I. by John Dell in April 1970 and seen on Jeegarnyeejip I. among litter on levee banks near the samphire flat.

Tree Skink, *Ablepharus boutonii*.—One collected on Culeenup I. near Lot 26 in April 1970; juvenile seen on trunk of a Flooded Gum (J. Dell).

## INVERTEBRATES

### Insects

The ants have been most studied. On May 22, 1969, Mr. Athol Douglas of the W.A. Museum, made an initial survey of the bull-ants (*Myrmecia*) on Culeenup and Jeegarnyeejip Is. On the latter *Myrmecia vindex* was very plentiful, and at one place, within an area of 12 ft. by 7 ft., 11 nests were found on a levee bank close to the water. This was the highest concentration of nests of this species he had ever encountered. Two nests of *M. nigriscapa* were also found on this island. Culeenup I. was examined in more detail during the April 1970 visit. *M. vindex* was again found to be very common, the nest concentrations being greater than is usually found on the mainland. All were on levee banks, but those on the lower slopes were built up high, like volcanoes. A second *Myrmecia* species, of the *arnoldi/nigriceps* group, with debris, including rabbit dung, on the mound, also occurred. Other ant species noted included: *Iridomyrmex purpurens*, *Rhytidoponera convexa*, *Campanotus claripes* (which had taken over a mound of the termite, *Coptotermes*), *C. nigriceps* and a species of *Melophorus*.

Two earth-dwelling termite species were found on Culeenup I.: *Coptotermes acinaciformis* and *Nasutitermes exitiosus*.

"Spitfire" caterpillars of the notodontid moth, *Antimima cryptica*, were plentiful on both Culeenup and Jeegarnyeejip Is., in April 1970 on *Jacksonia furcellata*, to which host plant they were almost entirely restricted. On Culeenup I. the Cabbage White Butterfly (*Pieris rapae*) was seen.

Several males of the Feather-horned Beetle, *Rhipidocera femoralis*, were flying around in a *Viminaria denudata* thicket on Culeenup I. in April 1970.

### Fresh-water Crustacea

Remains of the Koonac, *Cherax preissi*, were frequent in sub-swampy places on Culeenup and Jeegarnyeejip Is.

### Mollusca

The gastropod, *Coxiella glabra* (see Macpherson, *W. Aust. Nat.*, 5, 1957: 199) was exceedingly abundant in wind-rows on the margins of the Salt Lake on Culeenup I. (collected on April 12, 1970, when the lake was dry). This represents an extension of range for the species and is the first time it has been found on the Swan Coastal Plain.

A number of aestivating juvenile specimens of a species of *Austrosuccinea* were found by Miss V. M. Bristowe under the bark of a fallen Flooded Gum in a sub-swampy part of Culeenup I. on April 11, 1970.

The mollusca were identified by Mr. G. W. Kendrick, of the W.A. Museum.

—D. L. S.